NAME -

UID-

BRANCH – CSE

SUBJECT – MPI

SEC –

Aim:

Complement of a number 16 bit data **Task to be**

done:

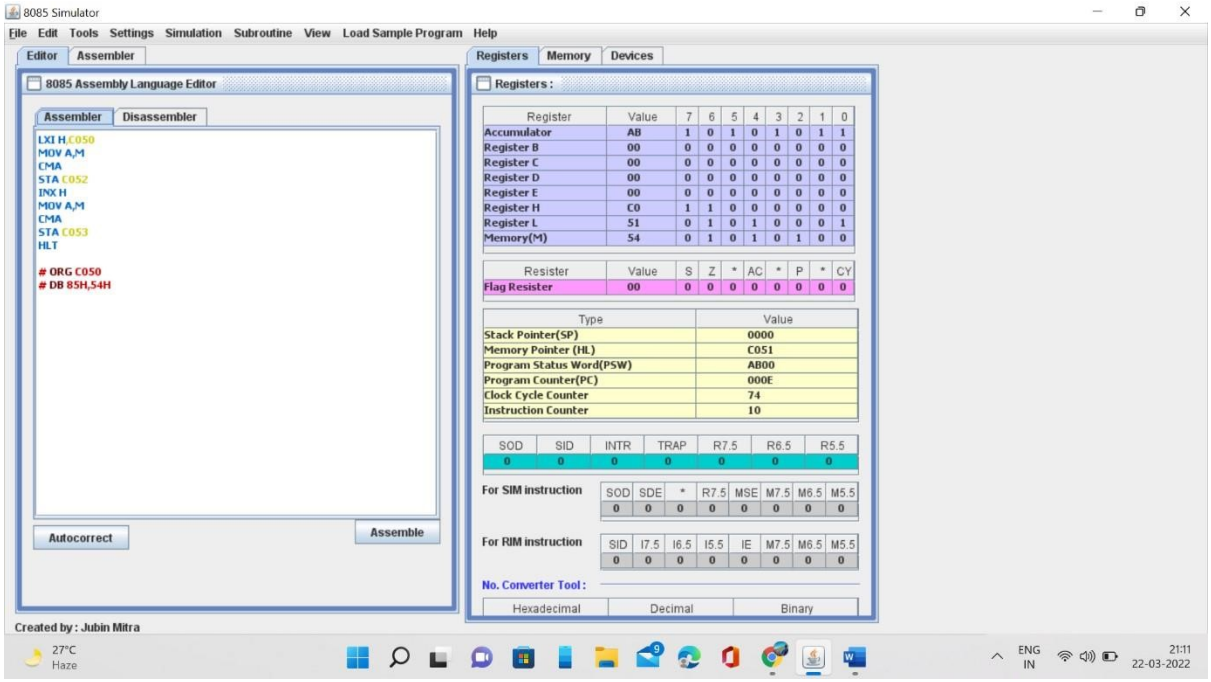
1. 1's Complement of a number 16 bit data.
2. 2's Complement of a number 16 bit data.

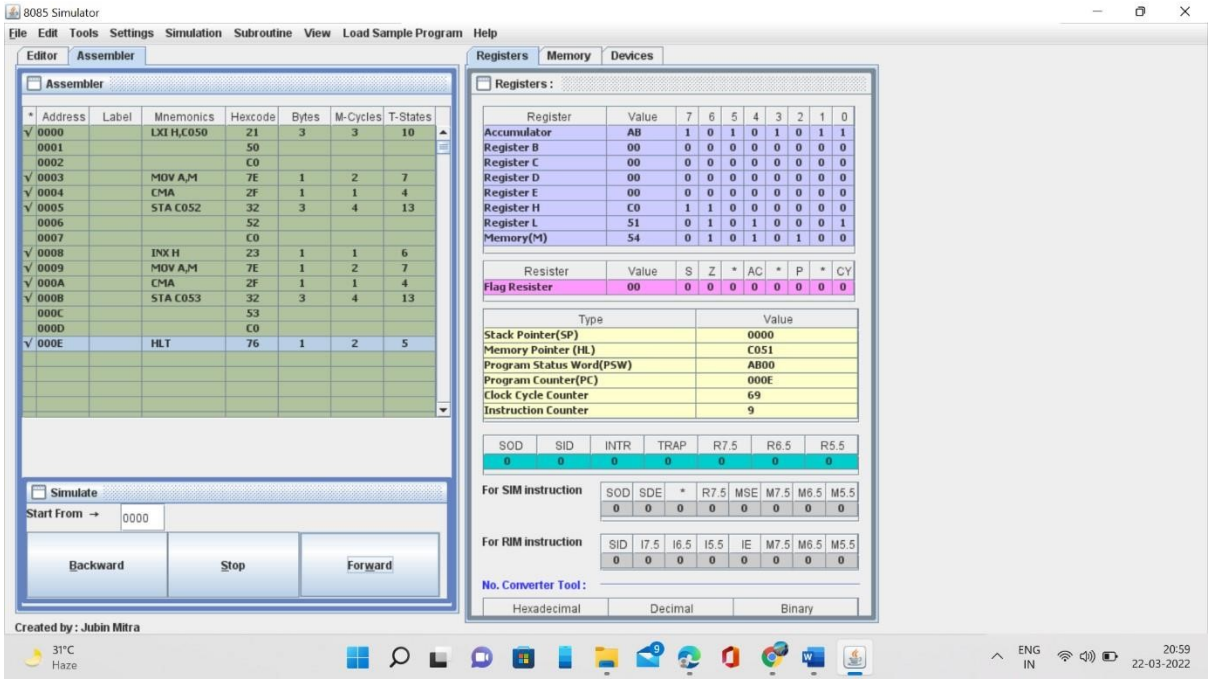
Apparatus / Simulator Used:

1. Jubin Application
2. 8085 Simulator
3. JDK

SCREENSHOTS OF CODE & OUTPUT:

1's Complement


8085 Simulator
File Edit Tools Settings Simulation Subroutine View Load Sample Program Help
Editor Assembler
8085 Assembly Language Editor
Assembler Disassembler
LXI H,C050
MOV A,M
CMA
STA C052
INX H
MOV A,M
CMA
STA C053
HLT
ORG C050
DB 85H,54H
Autocorrect
Assemble
Registers Memory Devices
Registers :
Register Value 7 6 5 4 3 2 1 0
Accumulator AB 1 0 1 0 1 0 1 1
Register B 00 0 0 0 0 0 0 0 0
Register C 00 0 0 0 0 0 0 0 0
Register D 00 0 0 0 0 0 0 0 0
Register E 00 0 0 0 0 0 0 0 0
Register H C0 1 1 0 0 0 0 0 0
Register L 51 0 1 0 1 0 0 0 1
Memory(M) 54 0 1 0 1 0 1 0 0
Resister Value S Z * AC * P * CY
Flag Resister 00 0 0 0 0 0 0 0 0
Type Value
Stack Pointer(SP) 0000
Memory Pointer (HL) C051
Program Status Word(PSW) AB00
Program Counter(PC) 000E
Clock Cycle Counter 74
Instruction Counter 10
SOD SID INTR TRAP R7.5 R6.5 R5.5
0 0 0 0 0 0 0
For SIM instruction SOD SDE * R7.5 MSE M7.5 M6.5 M5.5
0 0 0 0 0 0 0 0
For RIM instruction SID I7.5 I6.5 I5.5 IE M7.5 M6.5 M5.5
0 0 0 0 0 0 0 0
No. Converter Tool :
Hexadecimal Decimal Binary
Created by : Jubin Mitra
27°C Haze
ENG IN
21:11 22-03-2022


8085 Simulator
File Edit Tools Settings Simulation Subroutine View Load Sample Program Help
Editor Assembler
Assembler
* Address Label Mnemonics Hexcode Bytes M-Cycles T-States
√ 0000 LXI H,C050 21 3 3 10
0001 50
0002 C0
√ 0003 MOV A,M 7E 1 2 7
√ 0004 CMA 2F 1 1 4
√ 0005 STA C052 32 3 4 13
0006 52
0007 C0
√ 0008 INX H 23 1 1 6
√ 0009 MOV A,M 7E 1 2 7
√ 000A CMA 2F 1 1 4
√ 000B STA C053 32 3 4 13
000C 53
000D C0
√ 000E HLT 76 1 2 5
Simulate
Start From → 0000
Backward
Stop
Forward
Registers Memory Devices
Registers :
Register Value 7 6 5 4 3 2 1 0
Accumulator AB 1 0 1 0 1 0 1 1
Register B 00 0 0 0 0 0 0 0 0
Register C 00 0 0 0 0 0 0 0 0
Register D 00 0 0 0 0 0 0 0 0
Register E 00 0 0 0 0 0 0 0 0
Register H C0 1 1 0 0 0 0 0 0
Register L 51 0 1 0 1 0 0 0 1
Memory(M) 54 0 1 0 1 0 1 0 0
Resister Value S Z * AC * P * CY
Flag Resister 00 0 0 0 0 0 0 0 0
Type Value
Stack Pointer(SP) 0000
Memory Pointer (HL) C051
Program Status Word(PSW) AB00
Program Counter(PC) 000E
Clock Cycle Counter 69
Instruction Counter 9
SOD SID INTR TRAP R7.5 R6.5 R5.5
0 0 0 0 0 0 0
For SIM instruction SOD SDE * R7.5 MSE M7.5 M6.5 M5.5
0 0 0 0 0 0 0 0
For RIM instruction SID I7.5 I6.5 I5.5 IE M7.5 M6.5 M5.5
0 0 0 0 0 0 0 0
No. Converter Tool :
Hexadecimal Decimal Binary
Created by : Jubin Mitra
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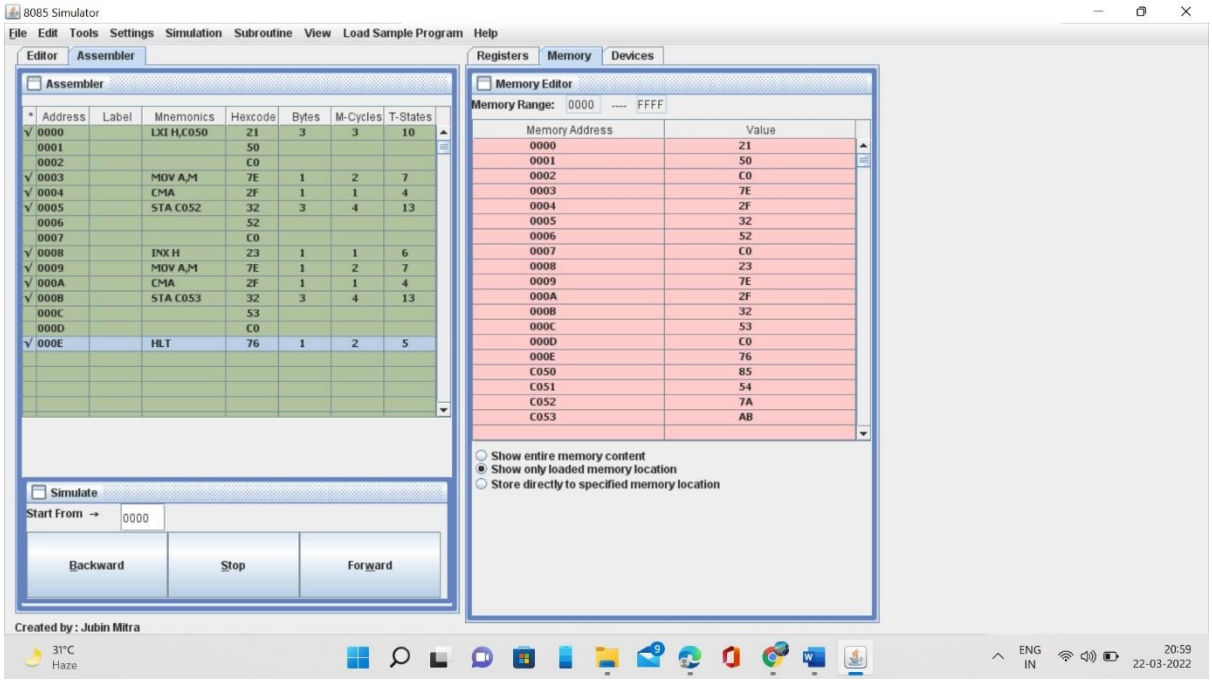
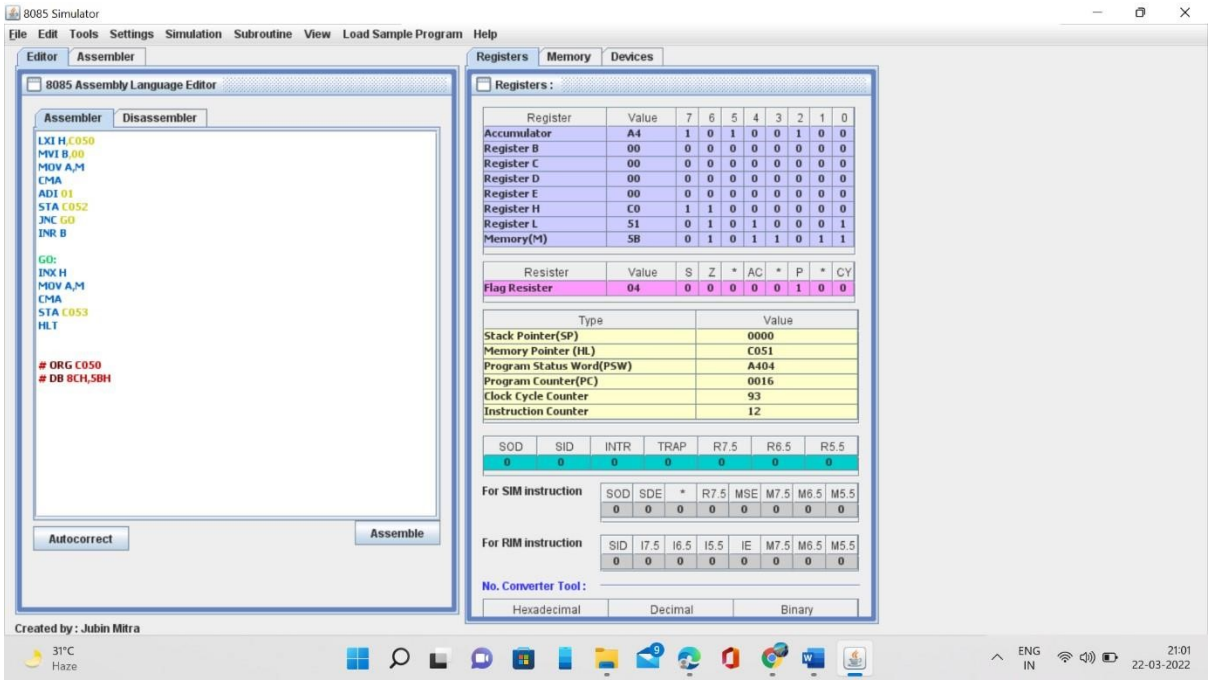
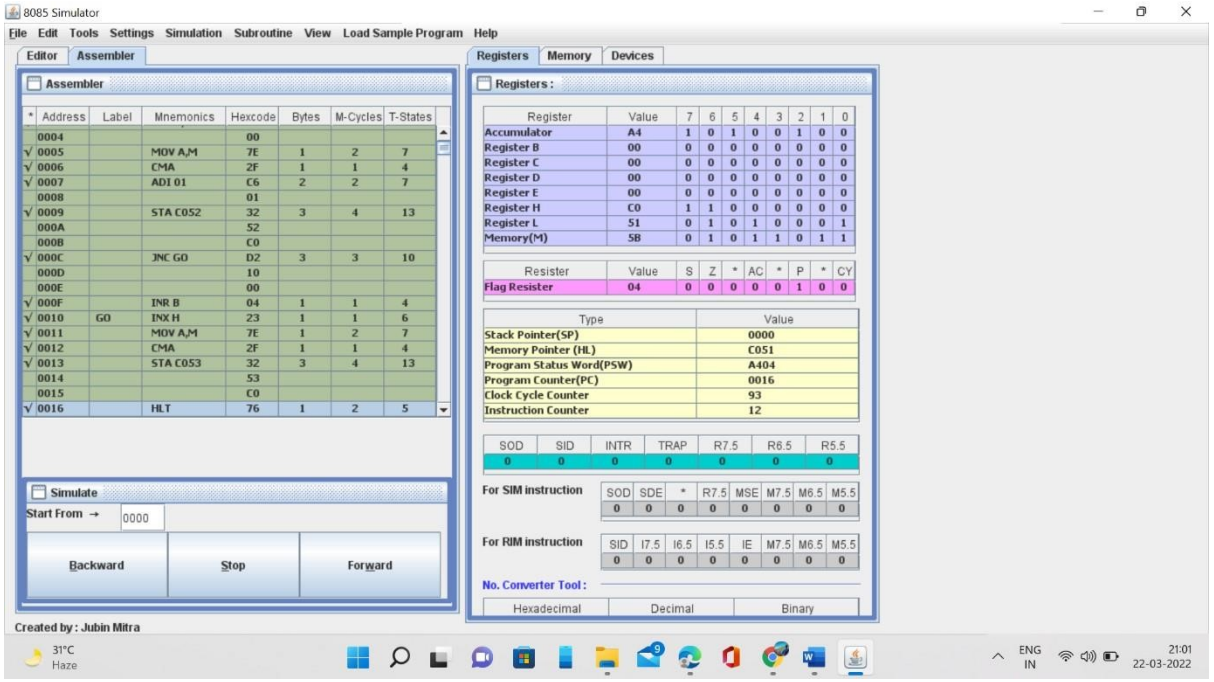
20:59 22-03-2022



2's Complement




8085 Simulator
File Edit Tools Settings Simulation Subroutine View Load Sample Program Help
Editor Assembler
Assembler
* Address Label Mnemonics Hexcode Bytes M-Cycles T-States
0004 00
√ 0005 MOV A,M 7E 1 2 7
√ 0006 CMA 2F 1 1 4
√ 0007 ADI 01 C6 2 2 7
0008 01
√ 0009 STA C052 32 3 4 13
000A 52
000B C0
√ 000C JNC GO D2 3 3 10
000D 10
000E 00
√ 000F INR B 04 1 1 4
√ 0010 GO INX H 23 1 1 6
√ 0011 MOV A,M 7E 1 2 7
√ 0012 CMA 2F 1 1 4
√ 0013 STA C053 32 3 4 13
0014 53
0015 C0
√ 0016 HLT 76 1 2 5
Simulate
Start From → 0000
Backward Stop Forward
Registers Memory Devices
Registers :
Register Value 7 6 5 4 3 2 1 0
Accumulator A4 1 0 1 0 0 1 0 0
Register B 00 0 0 0 0 0 0 0 0
Register C 00 0 0 0 0 0 0 0 0
Register D 00 0 0 0 0 0 0 0 0
Register E 00 0 0 0 0 0 0 0 0
Register H C0 1 1 0 0 0 0 0 0
Register L 51 0 1 0 1 0 0 0 1
Memory(M) 5B 0 1 0 1 1 0 1 1
Resister Value S Z * AC * P * CY
Flag Resister 04 0 0 0 0 0 1 0 0
Type Value
Stack Pointer(SP) 0000
Memory Pointer (HL) C051
Program Status Word(PSW) A404
Program Counter(PC) 0016
Clock Cycle Counter 93
Instruction Counter 12
SOD SID INTR TRAP R7.5 R6.5 R5.5
0 0 0 0 0 0 0
For SIM instruction SOD SDE * R7.5 MSE M7.5 M6.5 M5.5
0 0 0 0 0 0 0 0
For RIM instruction SID I7.5 I6.5 I5.5 IE M7.5 M6.5 M5.5
0 0 0 0 0 0 0 0
No. Converter Tool :
Hexadecimal Decimal Binary
Created by : Jubin Mitra
31°C Haze
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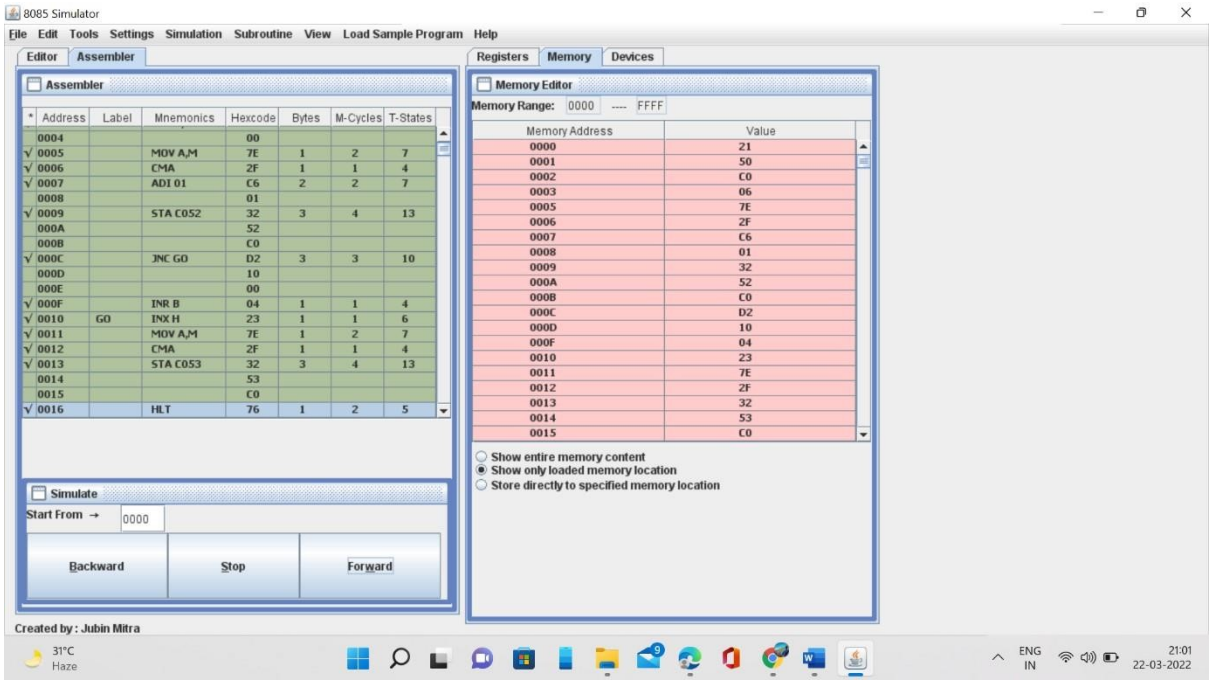
8085 Simulator
File Edit Tools Settings Simulation Subroutine View Load Sample Program Help
Editor Assembler
Assembler
* Address Label Mnemonics Hexcode Bytes M-Cycles T-States
0004 00
√ 0005 MOV A,M 7E 1 2 7
√ 0006 CMA 2F 1 1 4
√ 0007 ADI 01 C6 2 2 7
0008 01
√ 0009 STA C052 32 3 4 13
000A 52
000B C0
√ 000C JNC GO D2 3 3 10
000D 10
000E 00
√ 000F INR B 04 1 1 4
√ 0010 GO INX H 23 1 1 6
√ 0011 MOV A,M 7E 1 2 7
√ 0012 CMA 2F 1 1 4
√ 0013 STA C053 32 3 4 13
0014 53
0015 C0
√ 0016 HLT 76 1 2 5
Simulate
Start From → 0000
Backward Stop Forward
Registers Memory Devices
Memory Editor
Memory Range: 0000 ---- FFFF
Memory Address Value
0000 21
0001 50
0002 C0
0003 06
0005 7E
0006 2F
0007 C6
0008 01
0009 32
000A 52
000B C0
000C D2
000D 10
000F 04
0010 23
0011 7E
0012 2F
0013 32
0014 53
0015 C0
Show entire memory content
Show only loaded memory location
Store directly to specified memory location
Created by : Jubin Mitra
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ENG IN
21:01 22-03-2022